



PATENT
Attorney Docket No.: COOL-00601

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	Group Art Unit: 3743
Girish Upadhy et al.)	Examiner:
Serial No.: 10/699,505)	<u>TRANSMITTAL LETTER</u>
Filed: October 30, 2003)	162 N. Wolfe Road
For: CHANNELED FLAT PLATE FIN)	Sunnyvale, CA 94086
HEAT EXCHANGE SYSTEM,)	(408) 530-9700
DEVICE AND METHOD)	Customer No.: 28960

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

Enclosed please find a Supplemental Information Disclosure Statement and Form PTO-1449, including copies of the references contained thereon, for filing in the U.S. Patent and Trademark Office.

You will also find enclosed the associated Transmittals, Electronic Information Disclosure Statements, and United States Patent and Trademark Office Acknowledgment Receipts for the electronically filed Information Disclosure Statement (EFS ID #56484) filed on March 3, 2004.

The Commissioner is hereby authorized to charge any additional fee or credit overpayment to our Deposit Account No. 08-1275. **An originally executed duplicate of this transmittal is enclosed for this purpose.**

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: 3 - 03 - 04

By: Thomas B. Haverstock
Thomas B. Haverstock
Reg. No.: 32,571

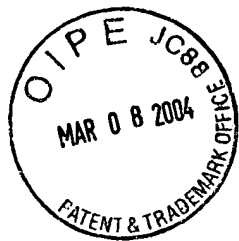
Attorneys for Applicants

CERTIFICATE OF MAILING (37 CFR § 1.8(a))

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

HAVERSTOCK & OWENS LLP.

Date: 3/3/04 By: [Signature]



PATENT
Attorney Docket No.: COOL-00601

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Girish Upadhyia et al.

Serial No.: 10/699,505

Filed: October 30, 2003

For: **CHANNELED FLAT PLATE FIN
HEAT EXCHANGE SYSTEM,
DEVICE AND METHOD**

) Group Art Unit: 3743

) Examiner:

) **SUPPLEMENTAL INFORMATION**
) **DISCLOSURE STATEMENT**

) 162 N. Wolfe Road
) Sunnyvale, CA 94086
) (408) 530-9700

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

The citations listed below, copies attached, may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

United States Patents or Published Patent Applications have been filed electronically (EFS ID #56484). Applicants have become aware of the following printed publication which may be material to the examination of this application:

- Yongendra Joshi, "Heat out of small packages", December 2001, Mechanical Engineer, pages 56-58;
- Snezana Konecni et al., "Convection Cooling of Microelectronic Chips", 1992, InterSociety Conference on Thermal Phenomena, pages 138-144;
- Michael B. Kleiner et al., "High Performance Forced Air Cooling Scheme Employing Microchannel Heat Exchangers", 1995, IEEE Transactions on Components, Packaging, and Manufacturing Technology-Part A, Vol. 18, No. 4, pages 795-804;
- Jerry K. Keska Ph. D. et al., "An Experimental Study on an Enhanced Microchannel Heat Sink for Microelectronics Applications", EEP-Vol. 26-2, Advances in Electronic Packaging, 1999, Vol. 2, pages 1235-1259;

- A. J. Arnold et al., "Heat Sink Design for Cooling Modules in a Forced Air Environment", IBM Technical Disclosure Bulletin, Vol. 22, No. 6, November 1979, pages 2297-2298;
- "Forced Boiling Cooling System with Jet Enhancement for Critical Heat Flux Extension", IBM Technical Disclosure Bulletin, Vol.39, No. 10, October 1996, page 143;
- "Self-Contained Active Heat Dissipation Device", IBM Technical Disclosure Bulletin Vol. 39, No. 04, April 1996, pages 115-116;
- "Pin Fin Array Heat Pipe Apparatus", IBM Technical Disclosure Bulletin, Vol. 37, No. 09, September 1994, page 171;
- Mali Mahalingam, Thermal Management in Semiconductor Device Packaging, 1985, Proceedings of the IEEE, Vol. 73, No. 9, September 1985, pages 1396-1404; and
- Roy W. Knight et al., Optimal Thermal Design of Air cooled Forced Convection finned Heat Sinks - Experimental Verification, October 1992, IEEE Transactions on Components, Hybrids, and Manufacturing Technology, Vol. 15, No. 5 pages 754-760.

This Supplemental Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97 is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that anyone or more of these citations constitutes prior art.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: 3-3-04

By: Thomas B. Haverstock
Thomas B. Haverstock
Reg. No.: 32,571

Attorneys for Applicants

CERTIFICATE OF MAILING (37 CFR§ 1.8(a))

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

- 2 -

HAVERSTOCK & OWENS LLP.
Date: 3/3/04 By: [Signature]

FORM PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark Office

Attorney Docket No.: COOL-00601

Serial No.: 10/699,505

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use Several Sheets If Necessary)

Applicants.: Girish Upadhyaya et al.

(37 CFR § 1.98(b))

Filing Date.: October 30, 2003

Group Art Unit.: 3743

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

AA	Yongendra Joshi, "Heat out of small packages", December 2001, Mechanical Engineer, pages 56-58.
AB	Snezana Konecni et al., "Convection Cooling of Microelectronic Chips", 1992, InterSociety Conference on Thermal Phenomena, pages 138-144.
AC	Michael B. Kleiner et al., "High Performance Forced Air Cooling Scheme Employing Microchannel Heat Exchangers", 1995, IEEE Transactions on Components, Packaging, and Manufacturing Technology-Part A, Vol. 18, No. 4, pages 795-804.
AD	Jerry K. Keska Ph. D. et al., "An Experimental Study on an Enhanced Microchannel Heat Sink for Microelectronics Applications", EEP-Vol. 26-2, Advances in Electronic Packaging, 1999, Vol. 2, pages 1235-1259.
AE	A. J. Arnold et al., "Heat Sink Design for Cooling Modules in a Forced Air Environment", IBM Technical Disclosure Bulletin, Vol. 22, No. 6, November 1979, pages 2297-2298.
AF	"Forced Boiling Cooling System with Jet Enhancement for Critical Heat Flux Extension", IBM Technical Disclosure Bulletin, Vol.39, No. 10, October 1996, page 143.
AG	"Self-Contained Active Heat Dissipation Device", IBM Technical Disclosure Bulletin Vol. 39, No. 04, April 1996, pages 115-116.
AH	"Pin Fin Array Heat Pipe Apparatus", IBM Technical Disclosure Bulletin, Vol. 37, No. 09, September 1994, page 171.
AI	Mali Mahalingam, <u>Thermal Management in Semiconductor Device Packaging</u> , 1985, Proceedings of the IEEE, Vol. 73, No. 9, September 1985, pages 1396-1404.
AJ	Roy W. Knight et al., <u>Optimal Thermal Design of Air cooled Forced Convection finned Heat Sinks - Experimental Verification</u> , October 1992, IEEE Transactions on Components, Hybrids, and Manufacturing Technology, Vol. 15, No. 5 pages 754-760.
AK	
AL	
AM	
AN	
AO	
AP	
AQ	
AR	
AS	
AT	
AU	
AV	
AW	
AX	
AY	
AZ	
BA	
BB	
BC	
BD	
BE	
BF	
BG	

Examiner:

Date Considered:

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.